



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------|---------------------|------------------|
| 10/574,270 | 01/22/2007 | Eanna Pronsias Timoney | 1817-0170PUS1 | 9754 |

2292 7590 06/24/2009
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

| |
|----------|
| EXAMINER |
|----------|

ADAMS, TASHIANA R

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3611

| | |
|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

06/24/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/574,270 | Applicant(s) TIMONEY ET AL. | |
| | Examiner TASHIANA ADAMS | Art Unit 3611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 48-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on 4/8/09 is acknowledged. Claims 48-69 are currently pending. Examiner finds applicants arguments not be fully persuasive but has chosen not to make this rejection final.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 48-49,58, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingston(US Pg. Pub. 2003/0001426) in view of Eriksson(US. Patent 5,366,337).** Kingston discloses an articulated dump truck vehicle (See fig. 1), including: a front tractor part(2) connected to an associated rear trailer part(3) by means of an articulated coupling(4) which is mounted between a rear end of the tractor part and a front end of the trailer part(See Fig. 1), said articulated coupling being operable to allow the front tractor part and the rear trailer part to rotate relative to each other about a first vertical axis(See Fig. 2), with steering means for turning the front tractor part relative to the rear trailer part about said first vertical axis for steering the vehicle(See Fig. 2), and said articulated coupling also allowing the front tractor part and the rear trailer part to rotate relative to each other about a second longitudinal axis of the

Art Unit: 3611

vehicle(See Fig. 2), the front tractor part having a front chassis(See Fig. 1), a pair of front wheels being mounted by a front suspension assembly on the front chassis(20a,20b), a prime mover mounted on said front tractor part and driveably connected to at least one pair of wheels on the vehicle(See Fig. 1), a vehicle driving station on said front tractor part with controls for vehicle drive and steering(See Fig. 1), the rear trailer part having a rear chassis(See Fig. 1), at least two pairs of rear wheels mounted by a rear suspension assembly on the rear chassis(14a,14b,15a,15b), a tipping container(5) pivotally mounted on said rear trailer part with means for moving said tipping container on the rear chassis between a normally lowered load carrying position on the rear chassis and an inclined load tipping position on the rear chassis(See Specification Para 0024); but does not disclose that the front suspension assembly includes an independent suspension system for mounting the pair of front wheels on the front chassis of the front tractor part. Eriksson discloses the front suspension assembly includes an independent suspension system(See Specification Column 2, Lines 42-44). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide the independent suspension of Eriksson to the vehicle of Kingston. The motivation for doing so would have been to provide great distance between the wheel units of the chassis portions on each side of the vehicle.

3. With respect to claim 49, Eriksson discloses wherein said front suspension assembly is an independent suspension module mounted on the front chassis(See Fig. 1 and note that the motivation to combine is the same as discussed above.)

Art Unit: 3611

4. With respect to claim 58, Kingston discloses wherein said tipping load container does not extend substantially over the steer axis so that the centre of gravity of the loaded container is normally between the axis of rotation of the rear wheels or slightly in front of the axle closest to the steer axis(See Fig. 1)

5. With respect to claim 68, Kingston discloses an articulated dump truck vehicle (See fig. 1), including: a front tractor part(2) connected to an associated rear trailer part(3) by means of an articulated coupling(4) which is mounted between a rear end of the tractor part and a front end of the trailer part(See Fig. 1), said articulated coupling being operable to allow the front tractor part and the rear trailer part to rotate relative to each other about a first vertical axis(See Fig. 2), with steering means for turning the front tractor part relative to the rear trailer part about said first vertical axis for steering the vehicle(See Fig. 2), and said articulated coupling also allowing the front tractor part and the rear trailer part to rotate relative to each other about a second longitudinal axis of the vehicle(See Fig. 2), the front tractor part having a front chassis(See Fig. 1), a pair of front wheels being mounted by a front suspension assembly on the front chassis(20a,20b), a prime mover mounted on said front tractor part and driveably connected to at least one pair of wheels on the vehicle(See Fig. 1), a vehicle driving station on said front tractor part with controls for vehicle drive and steering(See Fig. 1), the rear trailer part having a rear chassis(See Fig. 1), at least two pairs of rear wheels mounted by a rear suspension assembly on the rear chassis(14a,14b,15a,15b), a tipping container(5) pivotally mounted on said rear trailer part with means for moving said tipping container on the rear chassis between a normally lowered load carrying

Art Unit: 3611

position on the rear chassis and an inclined load tipping position on the rear chassis(See Specification Para 0024); but does not disclose that the front suspension assembly includes an independent suspension system for mounting the pair of front wheels on the front chassis of the front tractor part(See Figs. 1&3) said front suspension assembly being an independent suspension module mounted on the front chassis(See Figs. 1&3). Eriksson discloses the front suspension assembly includes an independent suspension system(See Specification Column 2, Lines 42-44). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide the independent suspension of Eriksson to the vehicle of Kingston. The motivation for doing so would have been to provide great distance between the wheel units of the chassis portions on each side of the vehicle.

6.

7. **Claims 50-57, 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingston (US Pg. Pub 2003/0001426) in view of Eriksson(US. Patent 5,366,337) in further view of Schmitz et al. (US Patent 6,105,984).** The combination of Kingston and Eriksson discloses the articulated dump truck set forth above, but does not disclose wherein said independent suspension module includes an axle housing with means for attachment to the front chassis, the two front wheels being pivotally mounted at opposite sides of said axle housing for vertical movement, each front wheel being mounted by one or more suspension arms on the axle housing, each suspension arm being pivotally connected to the axle housing and to a wheel carrier on which the front wheel is rotatably mounted to allow vertical movement of the wheel on the axle

Art Unit: 3611

housing, and spring means mounted between a suspension arm or the wheel carrier and the front chassis to resist vertical wheel movement. Schmitz et al. discloses wherein said independent suspension module includes an axle housing with means for attachment to the front chassis(See Figs. 2-3), the two front wheels being pivotally mounted at opposite sides of said axle housing for vertical movement(See Figs. 2-3), each front wheel being mounted by one or more suspension arms on the axle housing(See Figs. 2-3), each suspension arm being pivotally connected to the axle housing and to a wheel carrier on which the front wheel is rotatably mounted to allow vertical movement of the wheel on the axle housing(See Figs. 2-3), and spring means mounted between a suspension arm or the wheel carrier and the front chassis to resist vertical wheel movement(See Figs. 2-3). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the independent suspension system of Schmitz et al. to the articulated dump truck vehicle of Kingston and Eriksson. The motivation for doing so would have been to limit displacement impact between the tractor and trailer when overcoming obstacles.

8. With respect to claim 51/53, Schmitz et al. discloses wherein a pair of suspension arms are provided(See Fig. 2), namely an upper suspension arm(34) and a lower suspension arm(35) which are vertically spaced-apart, each of the upper suspension arm and lower suspension arm having an inner end and an outer end(See Fig. 2), the inner end of each suspension arm being pivotally connected to the axle housing and the other end of each suspension arm being pivotally connected to the wheel carrier(See Fig. 2). At the time of the invention, it would have been obvious to a

Art Unit: 3611

person of ordinary skill in the art to include the independent suspension system of Schmitz et al. to the articulated dump truck vehicle of Kingston. The motivation for doing so would have been to limit displacement impact between the tractor and trailer when overcoming obstacles.

9. With respect to claim 52, Schmitz et al. discloses wherein the front suspension assembly includes a suspension unit for each front wheel (See Fig. 2), said suspension unit having one or more suspension arms(See Fig. 2), each suspension arm being pivotally connected to the front chassis and to a wheel carrier on which the front wheel is rotatably mounted to allow vertical movement of the front wheel on the front chassis(See Fig. 2), and spring means mounted between a suspension arm or the wheel carrier and the front chassis to resist vertical wheel movement(See Fig. 2). At the time of the invention it would have been obvious to one of ordinary skill in the art to include the front suspension assembly of Schmitz et al. to the vehicle of Kingston. The motivation for doing so would have been to provide additional control of the vehicle with going over different terrains.

10. With respect to claim 54, Schmitz et al. discloses wherein the spring means includes a coil spring and associated damper housed within the spring and mounted between a lower mounting bracket and an upper mounting plate, the lower mounting bracket having a spring holder with downwardly extending forked arms which engage the lower control arm by means of a pivot pin, the upper mounting plate being secured by bolts to the front chassis (See Fig. 2). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the spring means of Schmitz et al.

Art Unit: 3611

in the vehicle of Kingston. The motivation for doing so would have been to provide an suspension system for use on all terrains.

11. With respect to claim 55, the combination of Kingston and Schmitz et al. discloses wherein the top of the axle housing is bolted to an underside of the front chassis(See Kingston Fig. 1)

12. With respect to claim 56, Schmitz et al. discloses wherein the front chassis includes a pair of spaced-apart longitudinal members interconnected by cross members (See Fig. 3), the axle housing being bolted to an underside of cross members between the longitudinal members(See Fig. 3). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include spaced-apart longitudinal members to the vehicle of Kingston in view of the teachings of Schmitz et al. The motivation for doing so would have been to provide additional attachment security of the suspension to the chassis.

13. With respect to claim 57, Schmitz et al. discloses wherein pivot pins are provided at each end of the suspension arms which rotatably engage in complementary pivot blocks mounted on the wheel carrier, on the axle housing or on the front chassis(See Fig. 2), the upper suspension arm being I-shaped having a pair of laterally extending pivot pins at each end which project forwardly and rearwardly of the upper suspension arm to rotatably engage the pivot blocks, the lower suspension arm being of wishbone construction and has a pair of laterally extending pivot pins at an outer end which project forwardly and rearwardly of the lower suspension arm to rotatably engage associated pivot blocks on the wheel carrier, inwardly extending fork arms of the lower

Art Unit: 3611

suspension arm each having at their inner end a laterally extending pivot pin which rotatably engages an associated pivot block on the axle housing or front chassis(See Fig. 2) At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide the pivots of Schmitz et al. the vehicle of Kingston. The motivation for doing so would have been to provide a more flexible frame.

14. With respect to claim 69, Kingston discloses an articulated dump truck vehicle (See fig. 1), including: a front tractor part(2) connected to an associated rear trailer part(3) by means of an articulated coupling(4) which is mounted between a rear end of the tractor part and a front end of the trailer part(See Fig. 1), said articulated coupling being operable to allow the front tractor part and the rear trailer part to rotate relative to each other about a first vertical axis(See Fig. 2), with steering means for turning the front tractor part relative to the rear trailer part about said first vertical axis for steering the vehicle(See Fig. 2), and said articulated coupling also allowing the front tractor part and the rear trailer part to rotate relative to each other about a second longitudinal axis of the vehicle(See Fig. 2), the front tractor part having a front chassis(See Fig. 1), a pair of front wheels being mounted by a front suspension assembly on the front chassis(20a,20b), a prime mover mounted on said front tractor part and driveably connected to at least one pair of wheels on the vehicle(See Fig. 1), a vehicle driving station on said front tractor part with controls for vehicle drive and steering(See Fig. 1), the rear trailer part having a rear chassis(See Fig. 1), at least two pairs of rear wheels mounted by a rear suspension assembly on the rear chassis(14a,14b,15a,15b), a tipping container(5) pivotally mounted on said rear trailer part with means for moving

Art Unit: 3611

said tipping container on the rear chassis between a normally lowered load carrying position on the rear chassis and an inclined load tipping position on the rear chassis(See Specification Para 0024), but does not disclose the front suspension assembly including an independent suspension system for mounting the pair of front wheels on the front chassis of the front tractor part. Eriksson discloses the front suspension assembly includes an independent suspension system(See Specification Column 2, Lines 42-44). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide the independent suspension of Eriksson to the vehicle of Kingston. The motivation for doing so would have been to provide great distance between the wheel units of the chassis portions on each side of the vehicle. Schmitz et al. discloses the front suspension assembly includes a suspension unit for each wheel(See Figs. 2-3), said suspension unit having a pair of suspension arms(See Fig. 2), each suspension arm being pivotally connected to the front chassis and to a wheel carrier on which the front wheel is rotatably mounted to allow vertical movement of the front wheel on the front chassis(See Fig. 2), and spring means mounted between a suspension arm or the wheel carrier and the front chassis to resist vertical wheel movement(See Figs. 2-3), the suspension arms comprising, namely an upper suspension arm(34) and a lower suspension arm(35) which are vertically spaced-apart, each of the upper suspension arm and lower suspension arm having an inner end and an outer end(See Fig. 2), the inner end of each suspension arm being pivotally connected to the axle housing and the other end of each suspension arm being pivotally connected to the wheel carrier(See Fig. 2). At the time of the invention, it would have

Art Unit: 3611

been obvious to a person of ordinary skill in the art to include the independent suspension system of Schmitz et al. to the articulated dump truck vehicle of Kingston.

The motivation for doing so would have been to limit displacement impact between the tractor and trailer when overcoming obstacles.

15.

16. **Claims 59-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingston (US Pg. Pub 2003/0001426) in view of Eriksson(US. Patent 5,366,337) in further view of Barron (US Patent 7, 226,056).** The combination of Kingston and Eriksson discloses the articulated dump truck set forth above, but does not disclose an anti-roll bar is fitted to the front independent suspension. Barron discloses the use of an anti-roll bar (38, 40) on a front independent suspension. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an ant-roll bar on the articulated dump truck of Kingston and Eriksson, in view of the teachings of Barron. The motivation for doing so would be to provide a device that would prohibit the rolling of the vehicle when the load weight changes or redistributes.

17. With respect to claim 60 & 63, Barron discloses sensing means to measure one or more of the vehicle speed (72) and the steer angles (76) of the front wheels and of the articulation joint and control means (70) to apportion steering action between the said front wheels and the articulation joint and a motion control system(70) having means for controlling operation of the vehicle suspension system in response to pitch, roll or yaw movement of the vehicle, wherein said means controls operation of the tractor system in response to pitch, roll or yaw movement of the vehicle(See Figs. 1-2,

Art Unit: 3611

11-12). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a sensing means, control means, and a motion control system on the articulated dump truck of Kingston, in view of the teachings of Barron. The motivation for doing so would be to provide additional control and stability of the vehicle.

18. With respect to claims 61-62, Barron discloses means for locking articulation around the vertical steering axis (21) and means for locking the wheel steering. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a means for locking articulation around the vertical steering axis and means for locking the wheel steering on the articulated dump truck of Kingston, in view of the teachings of Barron. The motivation for doing so would be to provide additional control and stability of the vehicle.

19. With respect to claims 64-67, Barron discloses having a roll control system(See Figs. 11-12) which includes means for stiffening the suspension in direct proportion to the amount of roll(Examiner notes that this is an inherent feature of a anti-roll bar)[**claim 65**] means for locking the suspension when a preset roll angle is reached(See Figs. 1-2, 11-12)[**claim 66**] a roll control system which includes means for controlling the operation of the suspension system in response to the sense turn angle between the tractor and trailer(See Figs. 1-2, 11-12)[**claim 67**] wherein the roll control system includes means for sensing turning of the tractor unit relative to the trailer unit and suspension locking means operably connected to the sensing means to lock the suspension when a preset turn angle is reached, and release the suspension for normal operation below said preset turn angle(See Figs. 1-2, 11-12) At the time of the

Art Unit: 3611

invention, it would have been obvious to a person of ordinary skill in the art to include a roll control system, means for locking the suspension, means for controlling operation of the suspension system, and means for sensing turning on the articulated dump truck of Kingston, in view of the teachings of Barron. The motivation for doing so would be to provide additional control and stability of the vehicle.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TASHIANA ADAMS whose telephone number is (571)270-5228. The examiner can normally be reached on Monday - Thursday 6:30 AM - 5:00 PM (Every Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 571-272-6651. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TASHIANA ADAMS/
Examiner, Art Unit 3611

/Lesley D. Morris/
Supervisory Patent Examiner, Art Unit 3611